

Table S1 Overview of the black soldier fly antimicrobial peptide library.

Peptide	Sequence	Purity (%)	Modification	pI	Molar Mass (g/mol)
Alo1-like					
Hill-Alo1	CINNGDGCQPDGRQGNCCSGYCHKEPGWVTGYCR	90.94	-	6.67	3679.04
Hill-Alo2	CIANGNGCQPDGRQGNCCSGFCYKQRGWVAGYCRRR	95.69	-	8.77	3985.5
Diptericin fragment					
Hill-Dip1	ASVPEPADLREAFETEDAIYIPISEEEANRLRLPR	92.77	-	4.04	3982.41
Hill-Dip2	SAPKLEEEESALSYIPDAAEAEIAPASSHGRVRR	96.53	-	3.37	3637.92
Hill-Dip3	DVEQVLETEDAYYVPVSDDEAEVLRRLPR	93.08	-	3.37	3264.5
Hill-Dip4	SIDDLTLEDGEDHVEIITDDEVQRAKR	93.25	-	3.7	3199.35
Diptericin					
Hill-Dip5	QLNIQGGGSPHSGFDLSVQGRAKIWESDNGRNTLYGTGQYGQH LGGPYGNSEPSFGGGLMFSHRF	Crude	-	7.72	6928.42
Hill-Dip6	QIFAQGGGSPGKGYDIYAQGRAKLWESQNQRNSLHGTASYSQH LGGPYGNSRPNVGGGLTFTHRF	90.00	-	10.28	6981.51
Knottin-like					
Hill-Knot1	IKCTASICTQICRILKYKCGYCASASRCVCLK	91.56	-	8.79	3531.37
Hill-Knot2	IKCVPSQCNQICRVLGKKCGYCKNASTCVCL	96.43	C-terminal amidation	8.81	3363.14
Hill-Knot3	RKCTASQCTRVCKKLGKRGYCSSTKCVC	90.22	-	9.8	3390.06
Defensin without SS ^b					
Hill-Def1	VTCDLLEPFLGPAPCMIHCIVRFRKRTGYCNSQNVCVCR	94.26	C-terminal amidation	8.41	4443.34
Hill-Def2a	ATCDLLSPFKVGHAAACAAHCIARGKRGGWCDKRAVCNCRK	93.75	-	9.26	4275.04
Hill-Def3	ATCTNWNCRQTQCIARGKRGGYCVERNICKCTS	93.97	-	8.76	3597.16
Hill-Def4	ATCDLLSPFKVGHAAACALHCIALGRRGGWCDGRAVCNCRR	92.58	-	8.43	4259
Hill-Def5	AMCDLLSGLNMGRSVCAMRCILKGRGGWCDQGVNCRV	91.95	-	7.84	4330.15
Hill-Def6	LSCLFENQAVSAIACGASCITRKGKRGGWCSNGVCRCTPN	90.56	-	8.42	4162.82
Hill-Def7	TTCDLISGTKIENIACAAHCIAMGHKGGYCNSNLICICR	93.94	-	7.46	4099.82
Hill-Def8	QLPCDYLSGLFGEDACNTDCIAKGHKSGFCTGLVCRCTRL	92.20	-	6.66	4353.99
Defensin with SS ^b					
Hill-Def2b	ATCDLLSPFKVGHAAACAAHCIARGKRGGWCDKRAVCNCRK	99.10	SS-Bridges: 3-36; 16-30; 20-38	9.26	4275.04
Linear peptide					

Hill-Lin1	AIYHRSIRSPQFSGSSASANAQSSSGRGGFFGGSSSSSSANAET NSFGG	92.77	C-terminal amidation	10.92	4712.8
Hill-Lin2	AIYHRSIRSPQFSGSSASANAQSSSGRGGFFGGSSSSSSANAET NSFGG	Crude	C-terminal amidation	11.82	4712.8
Cecropin					
Hill-Cec1	SWWKKVFKPVEKLGQRVRDATIQGIGIAQQGANVLATVRGGPPQ	96.40	C-terminal amidation	11.93	4785.52
Hill-Cec2	GWWKRVFKPVEKFGQRVRDAGVQGIAIAQQGANVLATARGGPP QQ	90.49	C-terminal amidation	12.14	4873.54
Hill-Cec3	GWWKRVFKPVEKLGQRVRDAGIQGLEIAQQGANVLATARGGPP QQ	90.85	C-terminal amidation	11.75	4911.59
Hill-Cec4	GWWKRVFKPVERLGQRVRDAGIQGLQIAQQGANVLATVRGGPP QQ	90.12	C-terminal amidation	12.29	4966.67
Hill-Cec5	SWFKKVFKPVEKVGQRVRDAGIQGVAIAQQGANVLATARGGPPH	91.89	C-terminal amidation	11.93	4669.36
Hill-Cec6	DQSKEPFKPMERPYQRVRDAKIQQGITAQNGPNVLAITRGGLEQ	90.87	C-terminal amidation	10.54	4950.6
Hill-Cec7	GWWKKVFKPVEKLGQRVRDAGIQGIAIAQQGANVLATVRGGPPQ	92.21	C-terminal amidation	11.93	4725.46
Hill-Cec8	GWWKRVFKPVEKFGQRVRDAGIQGIEIAQQGANVLATARGGPP QQ	94.74	C-terminal amidation	11.75	4945.6
Hill-Cec9	GWWKRVFKPVEKLGQRVRDAGIQGLEIAQQGANVLATVRGGPP QQ	91.69	C-terminal amidation	11.75	4939.64
Hill-Cec10	RWYKKIFKPVEKAVQRVRDGTLQALGVAQQAANVYATAQGAQQ QRHA	92.13	C-terminal amidation	11.42	5279.98
Hill-Cec11	RSLWKKIFKPVEKLGQRVRDAGIQGIAIAQQGANVLATVRGGPPQ	94.37	C-terminal amidation	12.16	4852.65
Hill-Cec12	RSLWKKLFPVERAGQRIRDATIKGIVIAQQGANVLATIRGGPAIPP GQ	91.34	C-terminal amidation	12.31	5277.19
Hill-Cec13	KSWWKKVFKPVERAGQRIRDASIKGLAVAQQGANVLSTIRGGPP VVAPPPQV	91.28	C-terminal amidation	12.17	5589.51
Stomoxyn-like					
Hill-Stom1	FNNLPICVEGLAGDIGSILLGVEDIGALAGAIANLALIAGECAAQG EAGAAICA	Crude	C-terminal amidation	3.27	5181.92
Hill-Stom2	TKAGPIVGNVLSIVGDAVAAGIAIARAPAIVADVEYCATNVVATTV ATLSKFGAAVKKCA	55.10	C-terminal amidation	9.4	5911.94

^a The molecular weight (MW) and isoelectric point (pI) of the peptides were calculated using the online software at <http://pepcalc.com/>

^b SS = disulfide bridges

Table S2 IC50 values (concentrations causing 50% growth inhibition of the pathogen), MIC values (minimum inhibitory concentrations needed for visual absence of bacterial growth), and MBC values (minimum concentrations needed for bactericidal activity) obtained in two individual screenings: the first screening starting at 64µM, the second screening starting at 32 µM. Static = bacteriostatic activity.

AMP	Repeat	IC50 (µM)						MIC (µM)			MBC (µM)		
		MRC-5 SV2	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. aeruginosa</i> ATCC 9027	<i>C. albicans</i> B59630	<i>A. fumigatus</i> B42928	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. aeruginosa</i> ATCC 9027	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. aeruginosa</i> ATCC 9027
Hill-Alo1	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Alo2	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Dip1	1	32.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Dip2	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Dip3	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Dip4	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Dip5	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 32.00	> 32.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 64.00	> 64.00	-	-	-
Hill-Dip6	1	4.54	> 32.00	0.85	> 32.00	> 64.00	> 64.00	> 32.00	2.00	> 3200	-	static	-
	2	7.73	> 32.00	1.00	> 32.00	> 32.00	> 32.00	> 64.00	2.00	> 64.00	-	8,00	-
Hill-Knot1	1	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Knot2	1	9.73	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	3.76	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-
Hill-Knot3	1	> 64.00	> 64.00	> 64.00	22.63	> 64.00	> 64.00	> 64.00	> 64.00	> 64.00	-	-	-
	2	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	> 32.00	-	-	-

Hill-Def1	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-
Hill-Def2a	1	>	64.00	<	0.25	35.33	32.86	>	64.00	>	64.00	0.25	>	64.00	>	64.00	static	-	-	-	-	-	-	-	-	
	2	>	32.00	0.19	>	32.00	>	32.00	>	32.00	>	32.00	2.00	>	32.00	>	32.00	static	-	-	-	-	-	-	-	
Hill-Def3	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	3.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Def4	1	>	64.00	0.50	>	64.00	32.00	>	64.00	>	64.00	1.00	>	64.00	>	64.00	static	-	-	-	-	-	-	-	-	
	2	>	32.00	0.70	>	32.00	>	32.00	>	32.00	>	32.00	8.00	>	32.00	>	32.00	static	-	-	-	-	-	-	-	
Hill-Def5	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Def6	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Def7	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Def8	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Def2b	1	>	64.00	8.50	>	64.00	>	64.00	>	64.00	>	64.00	64.00	>	32.00	>	32.00	static	-	-	-	-	-	-	-	
	2	>	32.00	13.45	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	64.00	>	64.00	static	-	-	-	-	-	-	
Hill-Lin1	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	-	-	-	-	-	-	-	-	
Hill-Lin2	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	-	-	-	-	-	-	-	-	
Hill-Cec1	1	>	64.00	>	64.00	<	0.25	<	0.25	>	64.00	>	64.00	>	64.00	0.25	1.00	-	1.00	4.00	-	-	-	-	-	
	2	>	32.00	>	32.00	0.21	0.20	>	32.00	>	32.00	>	32.00	0.50	0.50	-	0.50	0.50	-	0.50	0.50	-	-	-	-	
Hill-Cec2	1	>	64.00	>	64.00	0.50	0.93	>	64.00	>	64.00	>	64.00	1.00	4.00	-	1.00	16.00	-	1.00	16.00	-	-	-	-	
	2	>	32.00	4.36	0.31	0.76	>	32.00	>	32.00	>	32.00	2.00	2.00	-	2.00	2.00	-	2.00	2.00	-	-	-	-	-	
Hill-Cec3	1	>	64.00	>	64.00	0.49	0.40	>	64.00	>	64.00	>	64.00	1.00	4.00	-	1.00	16.00	-	1.00	16.00	-	-	-	-	
	2	>	32.00	>	32.00	0.22	0.79	>	32.00	>	32.00	>	32.00	0.50	2.00	-	32.00	2.00	-	32.00	2.00	-	-	-	-	
Hill-Cec4	1		37.37	>	64.00	0.50	<	0.25	>	64.00	>	64.00	>	64.00	1.00	1.00	-	static	16.00	-	-	-	-	-	-	
	2	>	32.00	>	32.00	0.32	0.22	>	32.00	>	32.00	>	32.00	2.00	2.00	-	2.00	2.00	-	2.00	2.00	-	-	-	-	
Hill-Cec5	1	>	64.00	>	64.00	0.50	2.61	>	64.00	>	64.00	>	64.00	1.00	16.00	-	static	static	-	-	-	-	-	-	-	

	2	>	32.00	>	32.00		0.23		3.60	>	32.00	>	32.00	>	32.00	0.50	32.00	-	0.50	32.00		
Hill-Cec6	1	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	64.00	>	32.00	>	32.00	-	1.00	16.00
	2	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	32.00	>	64.00	>	64.00	-	2.00	2.00
Hill-Cec7	1	>	64.00	>	64.00		0.38		0.40	>	64.00	>	64.00	>	64.00	1.00	4.00	-	-	-		
	2	>	32.00	>	32.00		0.32		0.78	>	32.00	>	32.00	>	32.00	2.00	2.00	-	-	-		
Hill-Cec8	1	>	64.00	>	64.00		0.45		1.29	>	64.00	>	64.00	>	64.00	1.00	4.00	-	1.00	64.00		
	2	>	32.00	>	32.00		0.68		1.73	>	32.00	>	32.00	>	32.00	2.00	8.00	-	8.00	8.00		
Hill-Cec9	1	>	64.00	>	64.00		0.43		0.38	>	64.00	>	64.00	>	64.00	1.00	1.00	-	1.00	static		
	2	>	32.00	>	32.00		0.21		0.88	>	32.00	>	32.00	>	32.00	0.50	2.00	-	0.50	2.00		
Hill-Cec10	1	>	64.00		32.74	<	0.25	<	0.25	>	64.00	>	64.00	>	64.00	0.25	1.00	-	0.25	16.00		
	2	>	32.00	>	32.00		0.22		0.22	>	32.00	>	32.00	>	32.00	0.50	2.00	-	32.00	2.00		
Hill-Cec11	1	>	64.00	>	64.00	<	0.25	<	0.25	>	64.00	>	64.00	>	64.00	1.00	1.00	-	1.00	4.00		
	2	>	32.00	>	32.00		0.22		0.24	>	32.00	>	32.00	>	32.00	0.50	2.00	-	32.00	8.00		
Hill-Cec12	1	>	64.00	>	64.00	<	0.25	<	0.25	>	64.00	>	64.00	>	64.00	0.25	1.00	-	1.00	static		
	2		19.45	>	32.00		0.32		0.23	>	32.00	>	32.00	>	32.00	2.00	2.00	-	8.00	8.00		
Hill-Cec13	1	>	64.00	>	64.00	<	0.25	<	0.25	>	64.00	>	64.00	>	64.00	1.00	1.00	-	1.00	64.00		
	2	>	32.00	>	32.00		0.23		0.25	>	32.00	>	32.00	>	32.00	0.50	2.00	-	0.50	2.00		
Hill-Stom1	1		11.65		58.58	>	64.00		16.00	>	64.00	>	64.00	>	64.00	>	32.00	>	32.00	-	1.00	4.00
	2		24.42	>	32.00	>	32.00		17.67	>	32.00	>	32.00	>	32.00	>	64.00	>	64.00	-	0.50	0.50

